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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,858	04/14/2004	Chang-Ho Lee	SAM-0520	6184

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Steven M. Mills  
MILLS & ONELLO LLP  
Suite 605  
Eleven Beacon Street  
Boston, MA 02108

EXAMINER

HA, NATHAN W

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/823,858

Applicant(s)

LEE ET AL.

Examiner

Nathan W. Ha

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.  
4a) Of the above claim(s) 22 and 34-48 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 and 23-33 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-21 and 23-33 in the reply filed on 6/13/06, is acknowledged.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: Should the plurality bonding pads in claim 1, line 4, the same with the "bonding pads" on line 3 of the same claim? Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-11, 16-17, 19, 21, and 23-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Buynoski (US 6,246,118.)

In regard to claims 1 and 19, in fig. 2, Buynoski semiconductor device, comprising:

a plurality of landing pads, metal 1, formed in the semiconductor device, the landing pads being sized and shaped to be used with bonding pads, or via, 1;

the bonding pads formed over a first portion of the landing pads; and  
a power supply line metal 2 formed over a second portion of the landing pads.

In regard to claims 2 and 23, wherein the bonding pads are formed in a first direction on the semiconductor device and the power supply line is formed in a second direction, fig. 2. Figures 1-4 show several circuit blocks.

In regard to claims 3-4 and 26, wherein the first and second directions are perpendicular; therefore, different, fig. 2.

In regard to claims 5-6 and 24-25, the metal layer 2 is capable as a voltage supply layer since it is made of metal, and could be used a ground. In circuitry power lines can be voltage supply and ground line.

In regard to claims 7-9 and 27-28, Buynoski further comprises a second power supply line, also metal 2, formed over the second portion of the landing pads, and either line could be used as a ground line. Fig. 2.

In regard to claims 10-11 and 29-30, the landing pads comprise a conductive layer, or contact layer, or metal layer. See fig. 2.

In regard to claims 16-17 and 21, the landing pads are formed in both center region and the edge region. See fig. 2.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12-15 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buynoski as applied to claims 1-11, 16-17, 19, 21, and 23-30 above, and further in view of Sundahl et al. (US 2002/0084536, hereinafter, Sundahl.)

In regard to claims 12-13 and 31-32, Buynoski discloses all of the claimed limitations as mentioned above, except the landing pads further comprise polysilicon layer. Sundahl, in figs. 1-2, discloses an analogous metal connection in an OLED for a memory structure comprises landing pads 232, bonding pads 240, and further discloses a polysilicon conductive layer 218 in order to improve the electrical connections there between since polysilicon has lower dielectric constant compared to other metals, and it is widely available.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include polysilicon in the electrical connection elements in order to take the advantage as mentioned.

In regard to claims 14-15, 18, 20, and 33, Sundahl further teaches that the circuit is used in a memory device, or memory blocks, for example, memory 1106 and power supply 1108. It should be further noted that the above metal structures may be used in several semiconductor devices, particularly, memory devices since they provide metal connections, which are necessary in any power device. Thus, it should be obvious to one of ordinary skill in the art to realize that metal connection structures indeed must be included in a memory device.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Nathan W. Ha', with a stylized flourish at the end.

Nathan Ha  
August 17, 2006